

The diagram illustrates a pulse generator circuit, designated as 6. It is divided into two main functional areas: a power supply section 1 and a control section 2. The power supply section 1 includes a transformer 3, a bridge rectifier 4, and a filter 5. The control section 2 includes a main power supply 63, a filter 64, a voltage divider 65, a timer 67, and a pulse generator 70. The circuit is controlled by a switch 7 and a pulse 8.

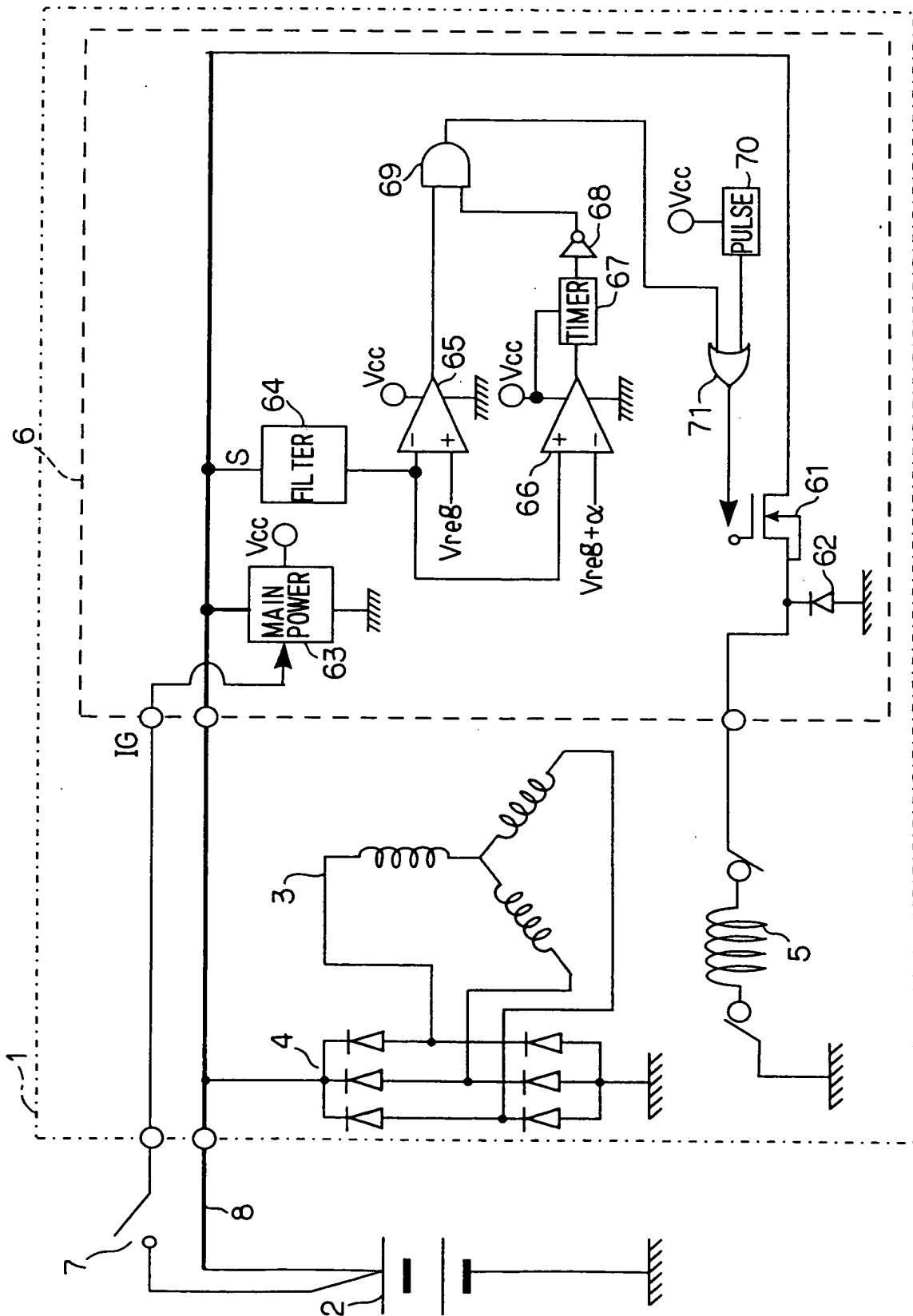
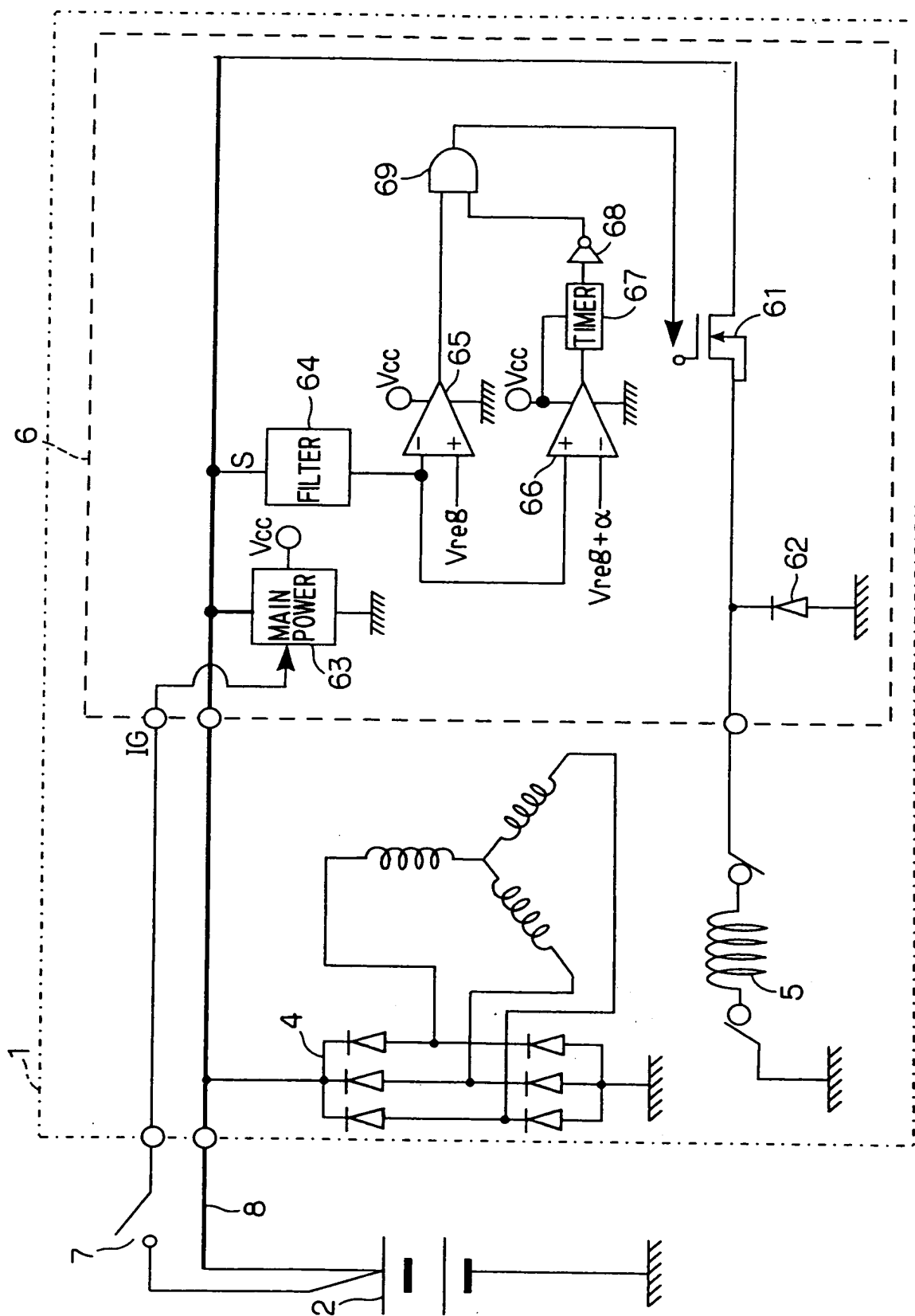


FIG. 2



The diagram illustrates a power supply system with a feedback control loop. The system is divided into two main sections by a dashed line labeled 6. On the left, a battery 2 is connected to a switch 1. The circuit includes a transformer 3 with two secondary windings. The primary winding is connected to a bridge rectifier 4. The secondary windings are connected to a full-bridge rectifier 5 and a Zener diode 62. The output of the full-bridge rectifier 5 is connected to a filter capacitor 64. The output of the filter capacitor 64 is connected to a main power supply 63. The main power supply 63 is connected to a feedback control loop. The feedback control loop consists of a comparator 65, a timer 67, and a switch 61. The comparator 65 has its non-inverting input (+) connected to a reference voltage V_{reg} and its inverting input (-) connected to the output of the filter capacitor 64. The output of the comparator 65 is connected to the input of the timer 67. The timer 67 has its output connected to the gate of the switch 61. The switch 61 is connected to the output of the main power supply 63. The output of the main power supply 63 is connected to a load resistor 66. The load resistor 66 is connected to ground. The output voltage of the load resistor 66 is labeled V_1 . The output voltage of the load resistor 66 is also connected to a Zener diode 62, which is connected to ground. The Zener diode 62 is labeled V_z . The output voltage of the load resistor 66 is also connected to a feedback network 72, which is connected to the inverting input of the comparator 65. The feedback network 72 consists of a resistor and a capacitor in parallel. The output voltage of the load resistor 66 is also connected to a switch 61, which is connected to ground. The switch 61 is labeled $V_{reg} < V_1 < V_z$.

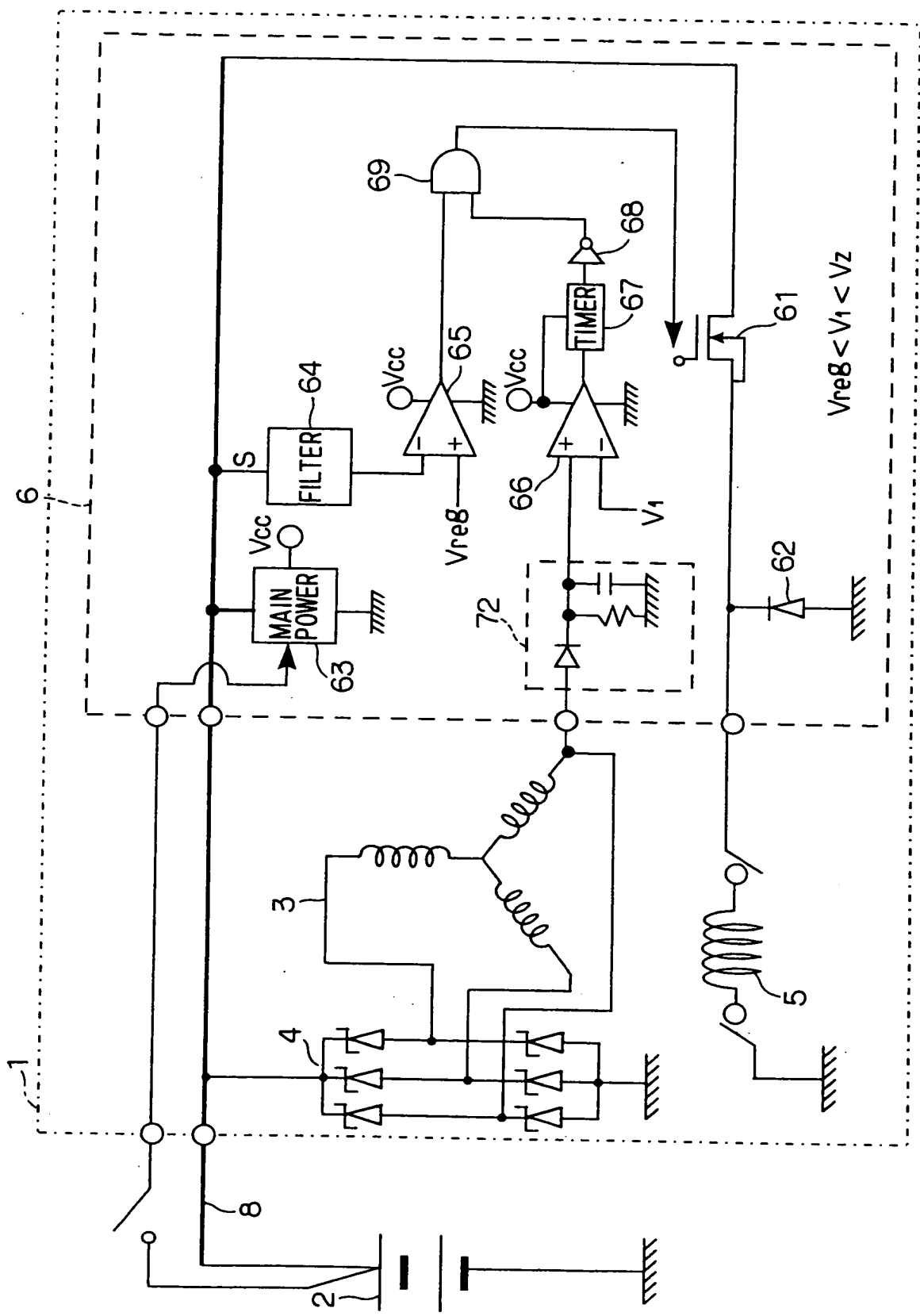


FIG. 4

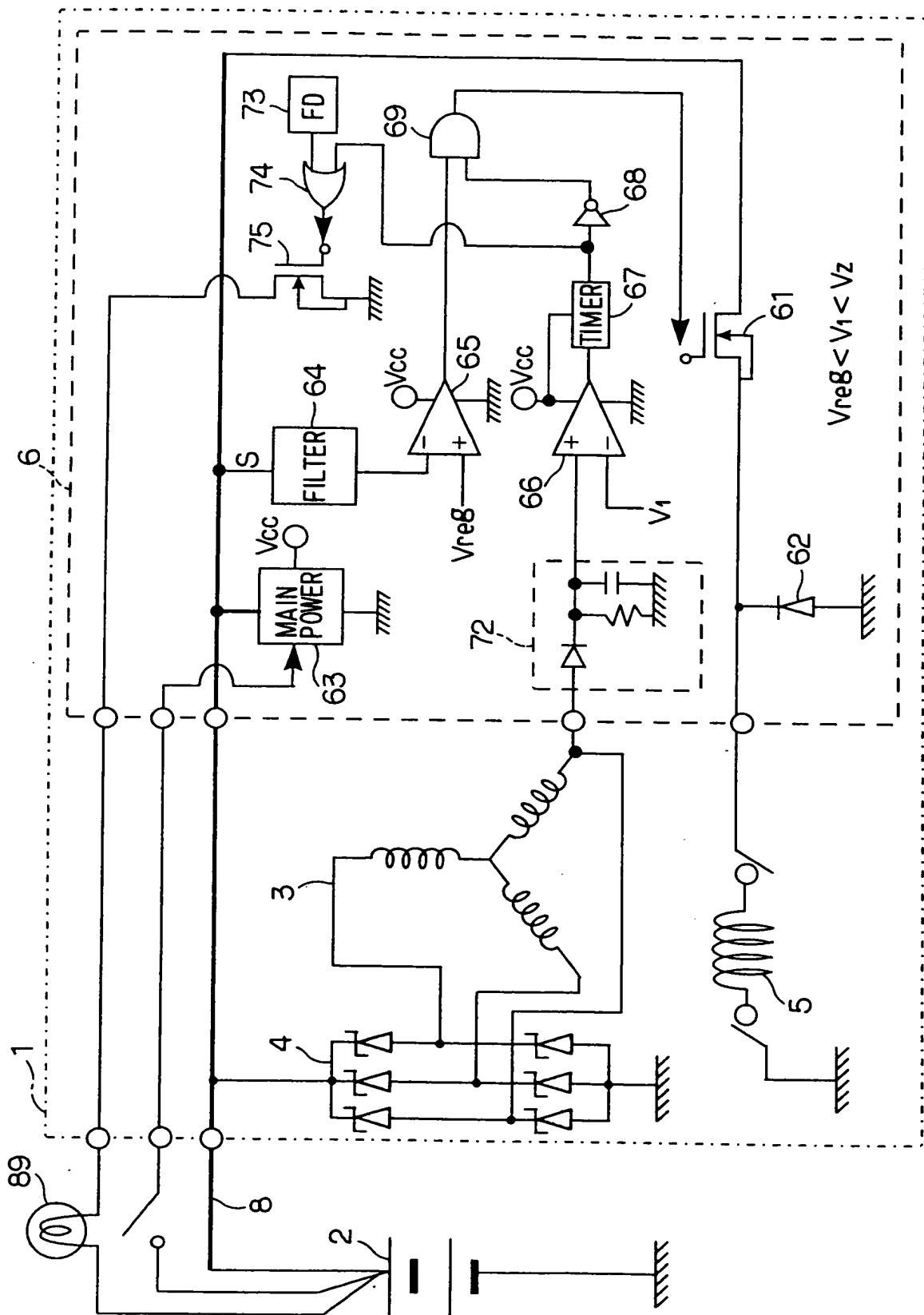
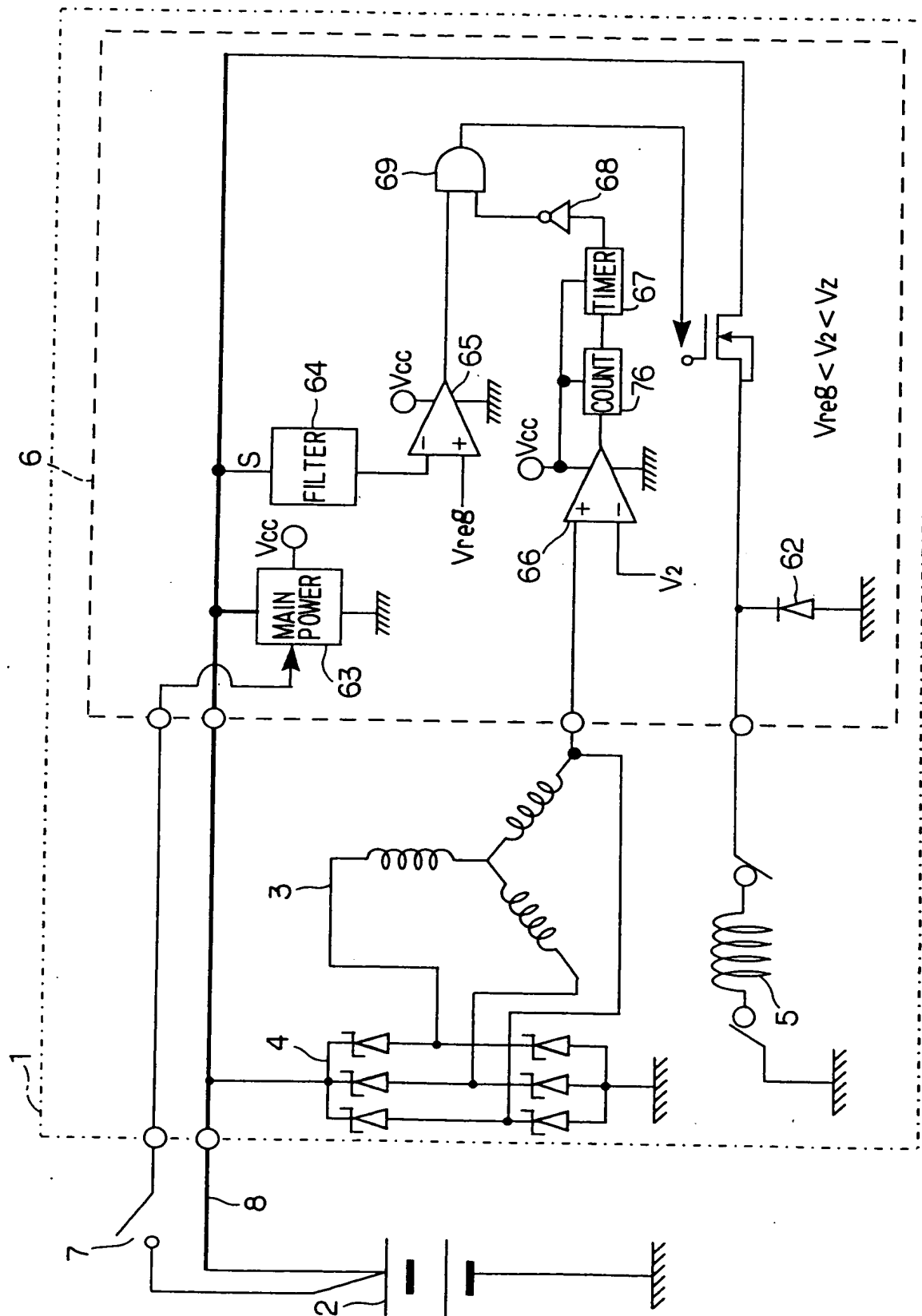


FIG. 5



The diagram shows a power supply system. A battery (2) is connected to a switch (7) and a line (8). The line (8) passes through a bridge rectifier (4) and an inductor (3) to a second bridge rectifier (5). The output of the second rectifier (5) is connected to a switch (6) and a line (1). The line (1) passes through an inductor (5) and a diode (62) to ground. A feedback loop is formed by a diode (63), a MAIN POWER block (64), a FILTER block (65), and an operational amplifier (66). The operational amplifier (66) has its non-inverting input (+) connected to a voltage divider (72) across the output, and its inverting input (-) connected to a voltage divider (77) across the filter output. The output of the operational amplifier (66) is connected to the gate of a MOSFET (61), which is in series with the output line (1). The condition $V_{reg2} < V_2$ is indicated.

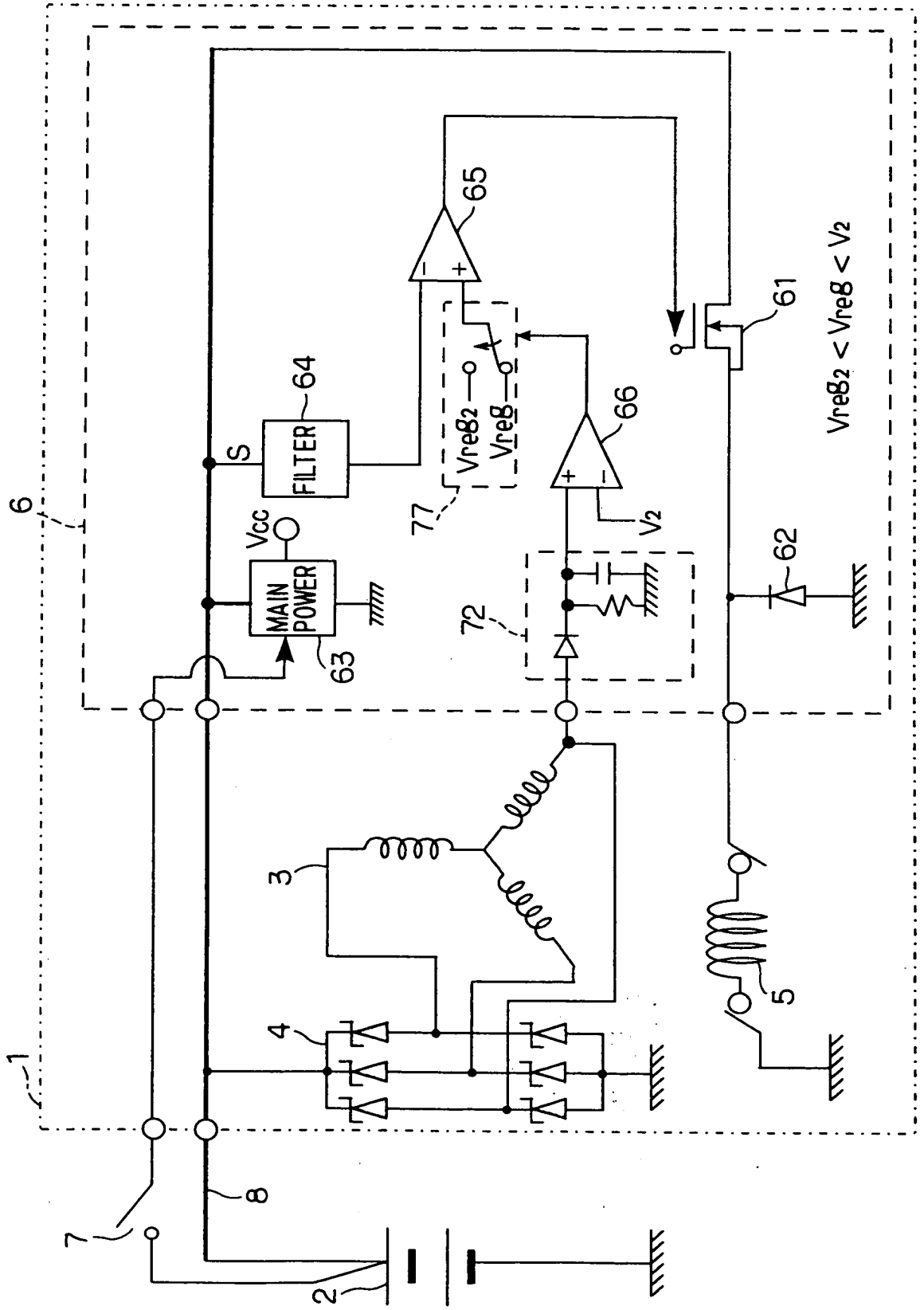


FIG. 7

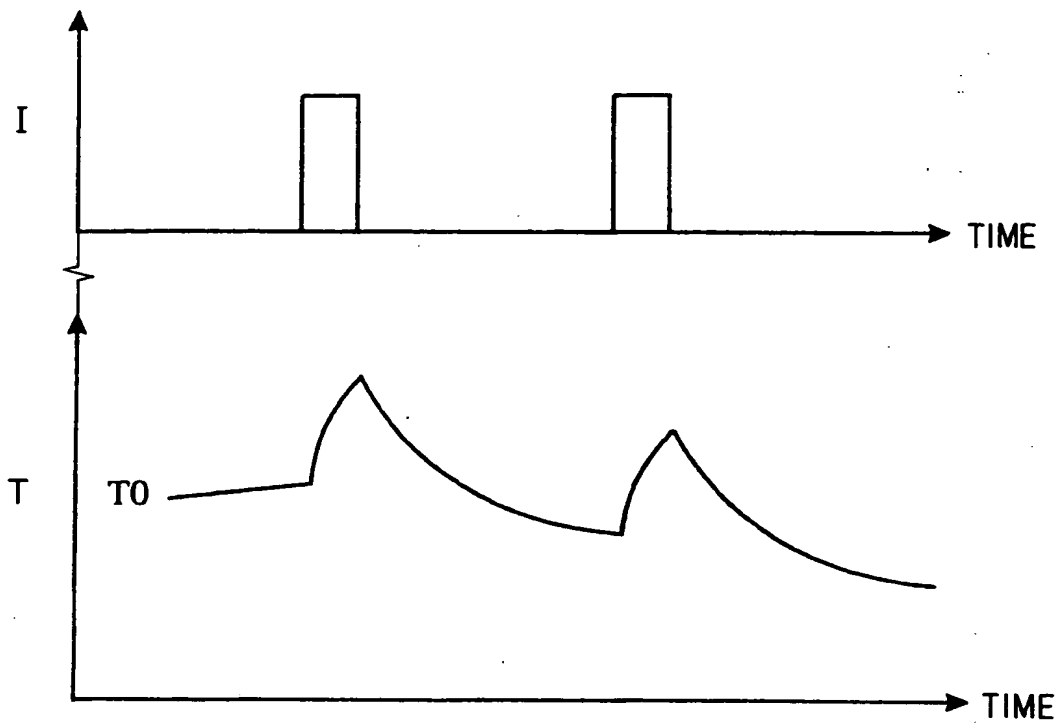


FIG. 22 PRIOR ART

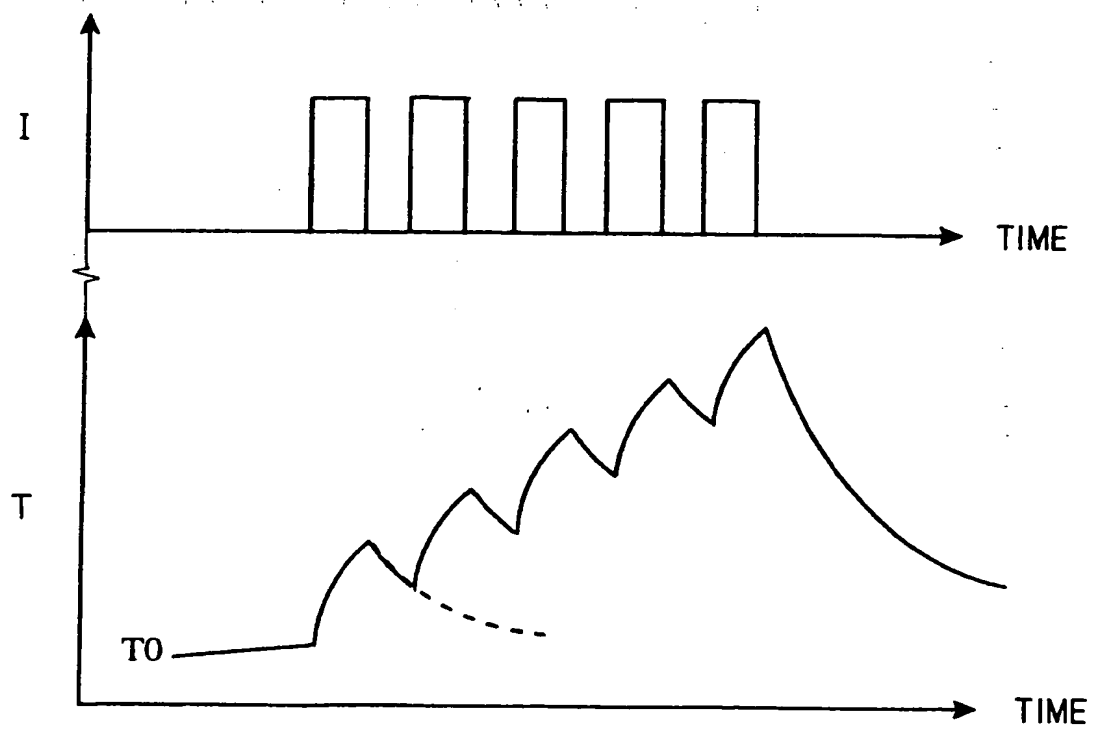


FIG. 8

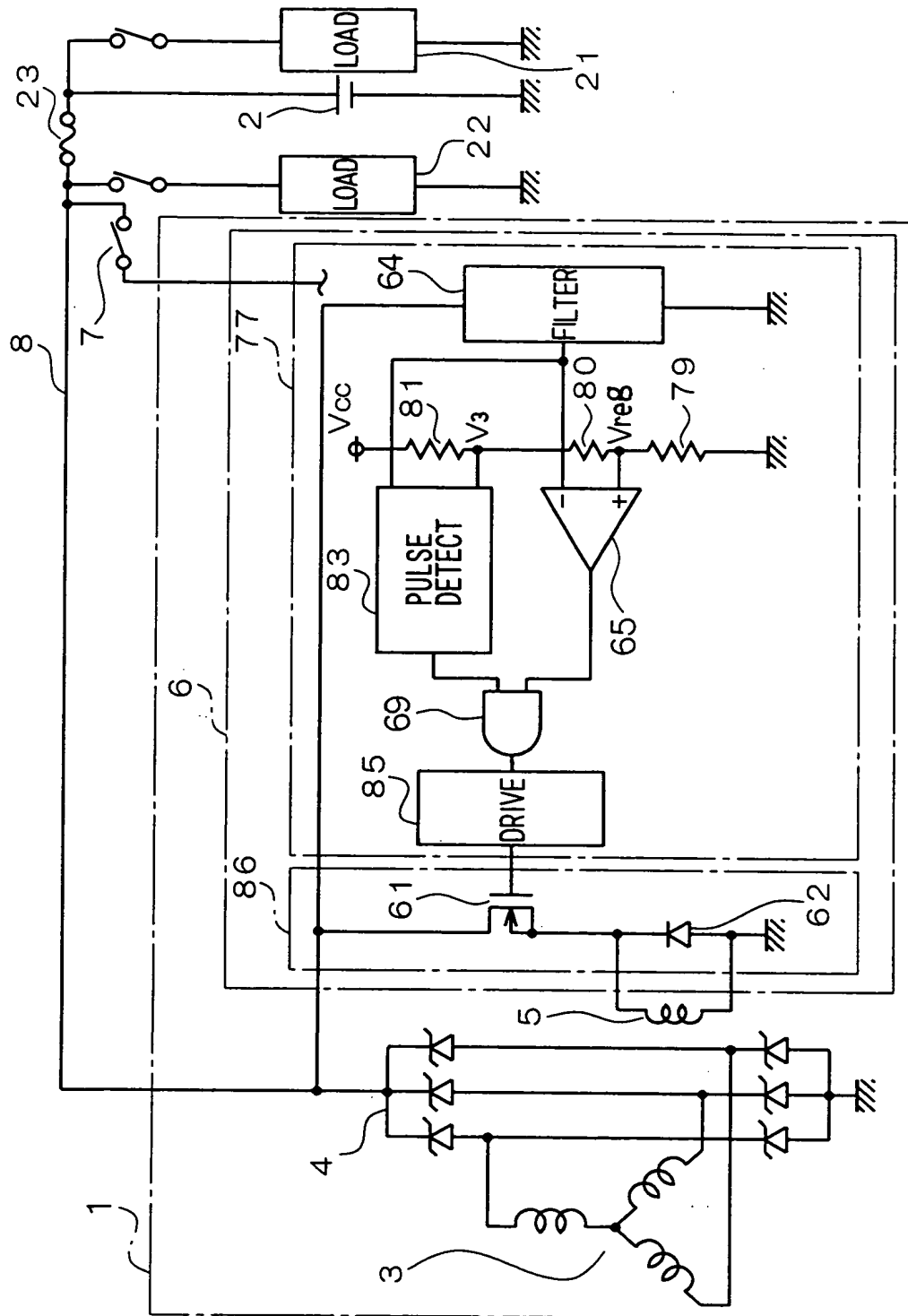


FIG. 9

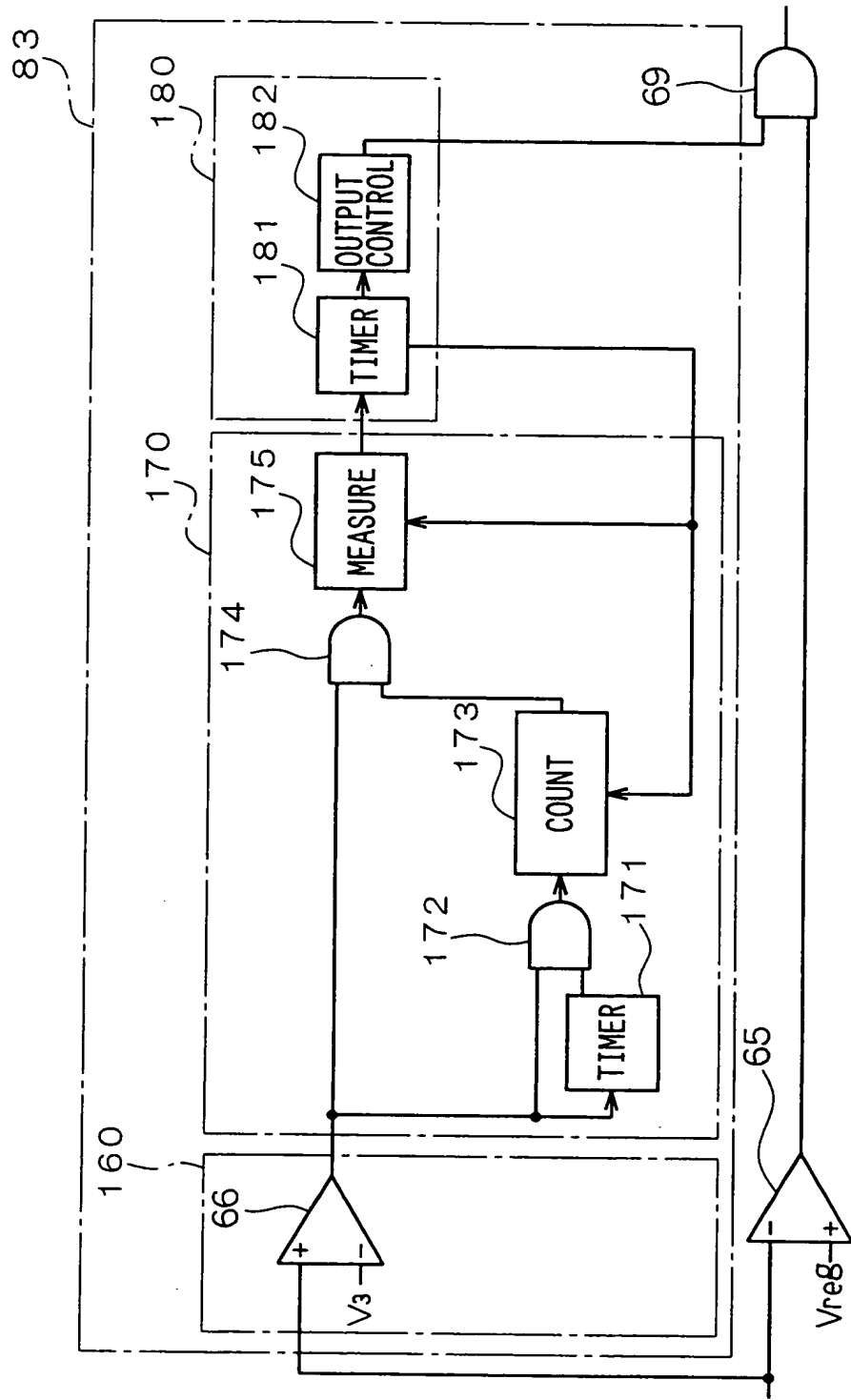


FIG. 10

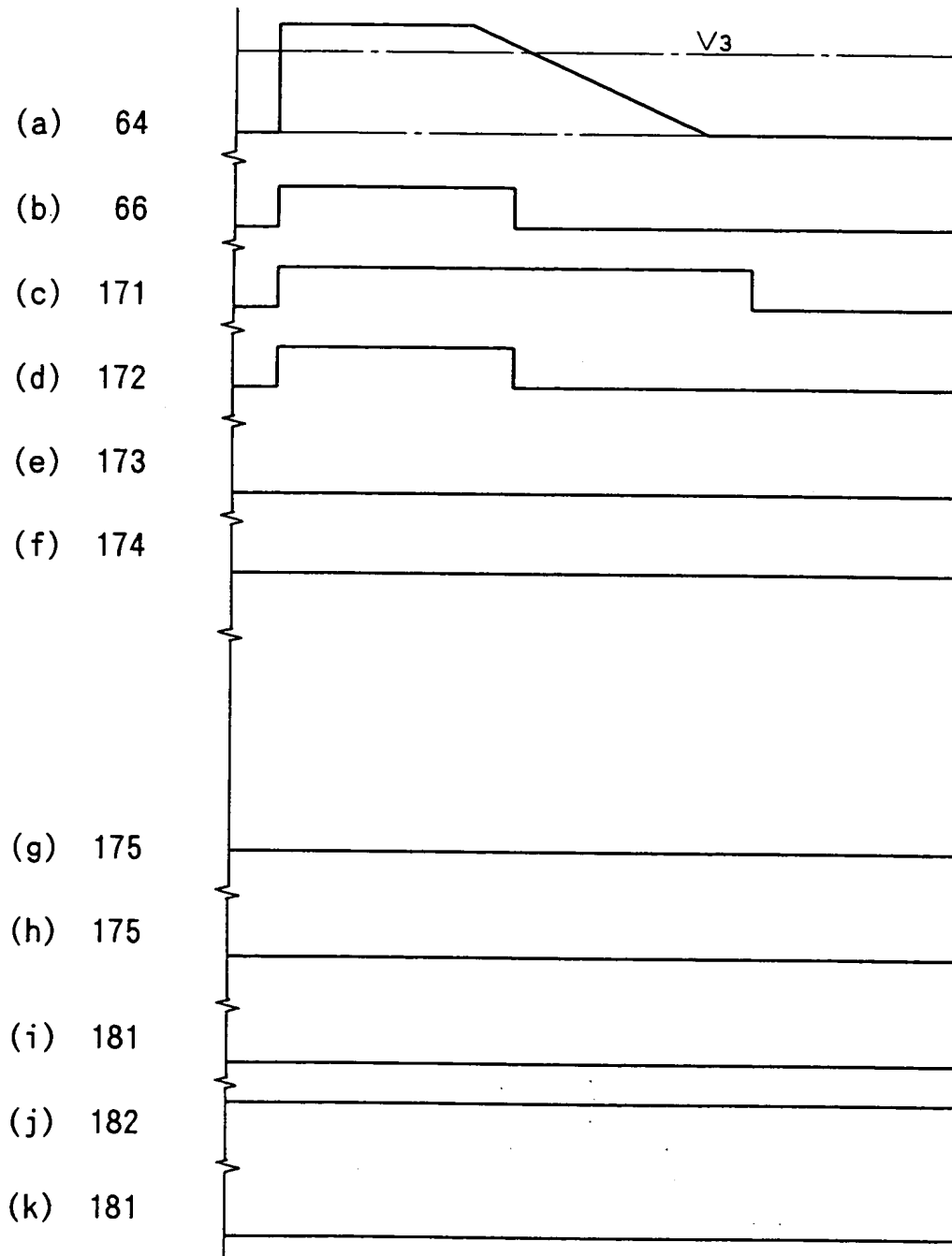


FIG. 11

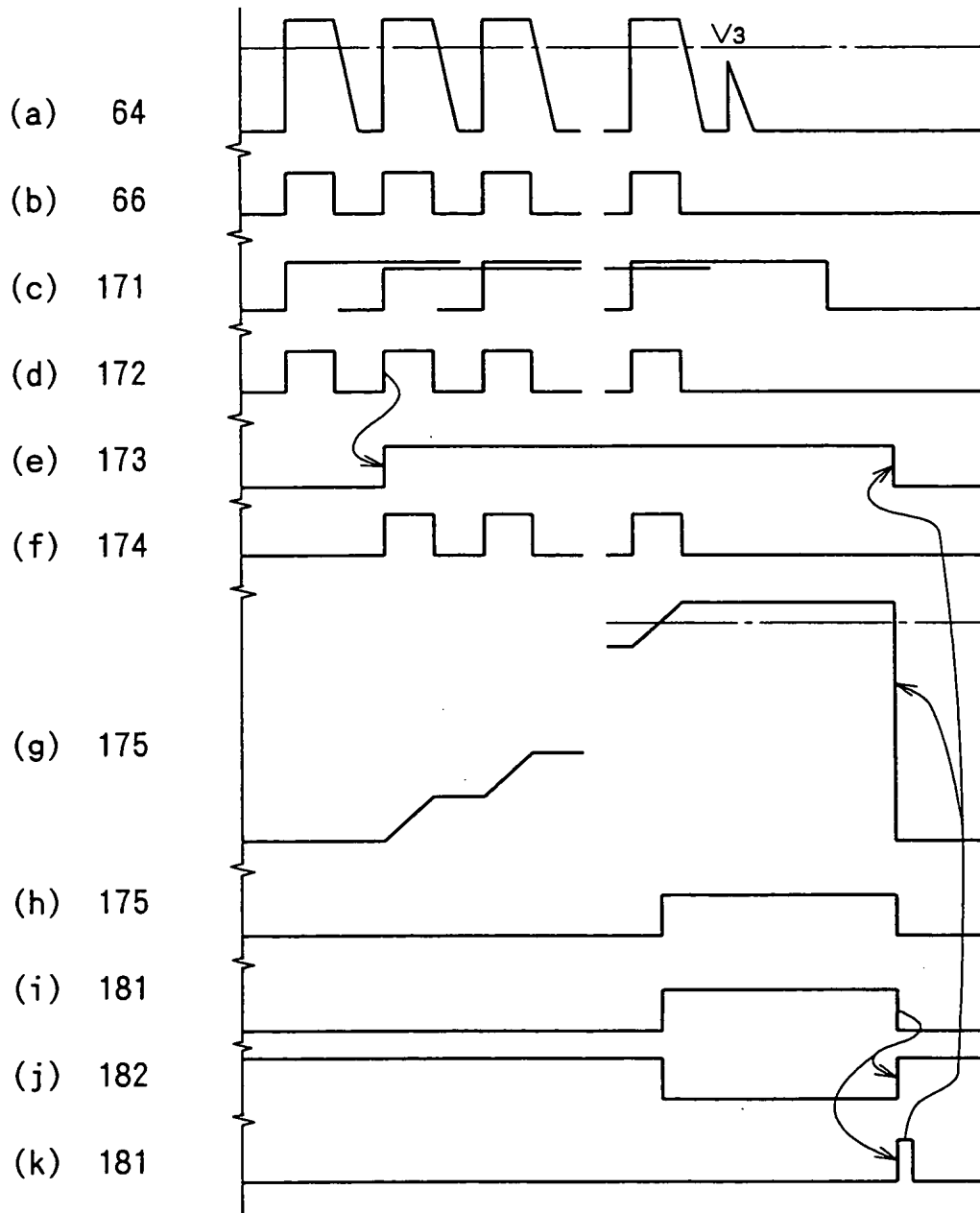


FIG. 12

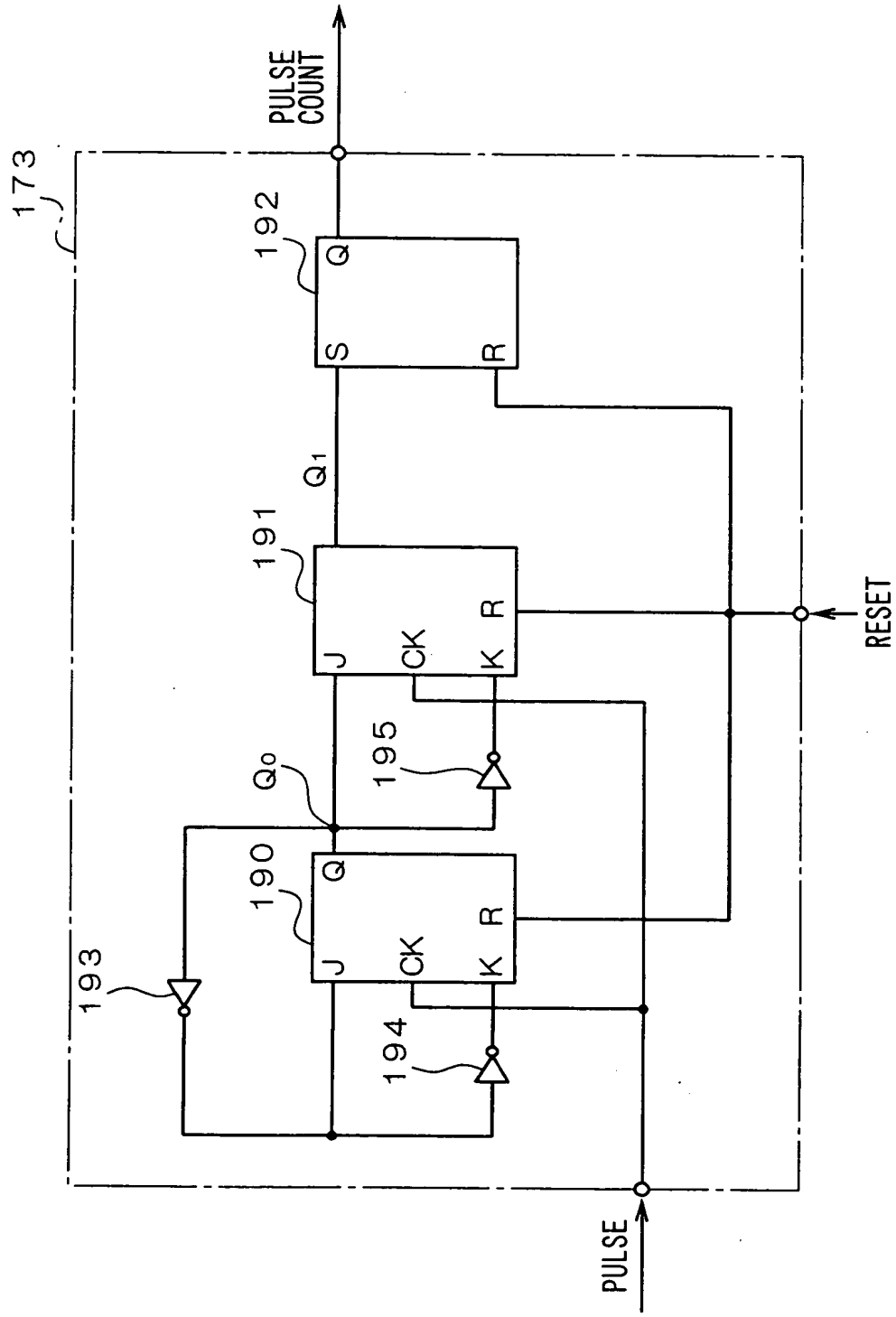


FIG. 13

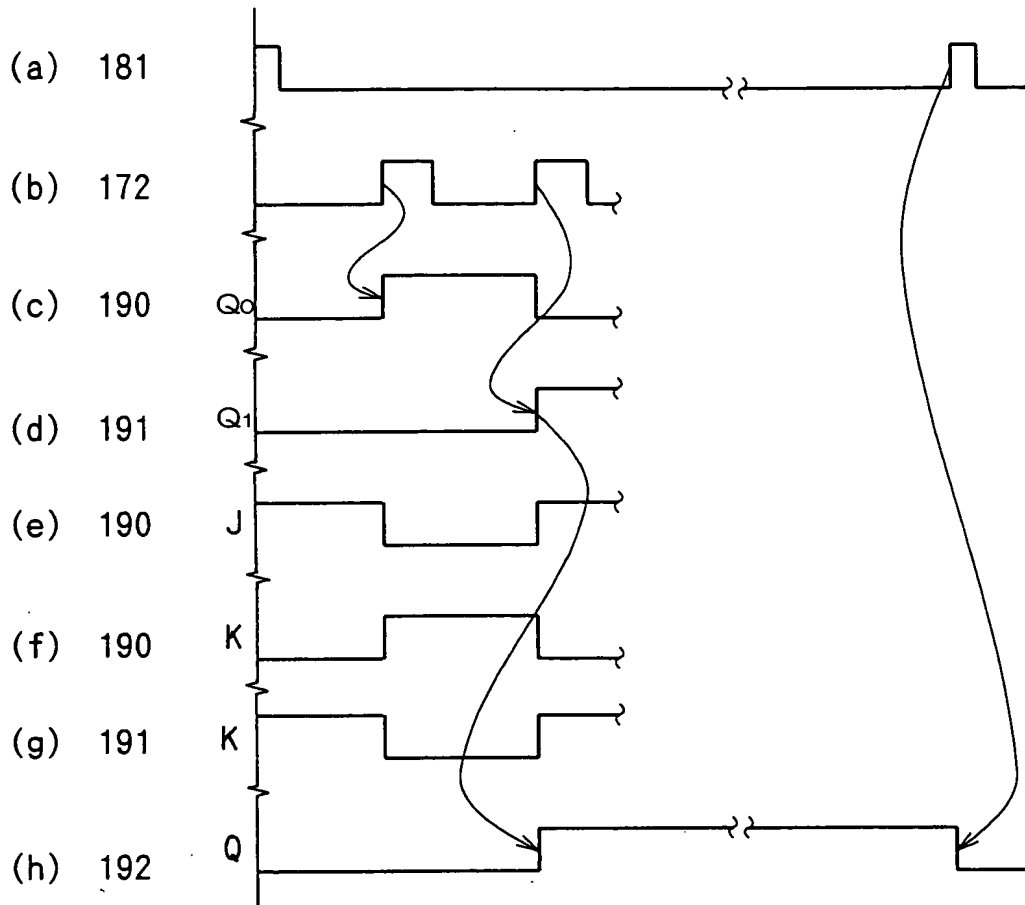


FIG. 14

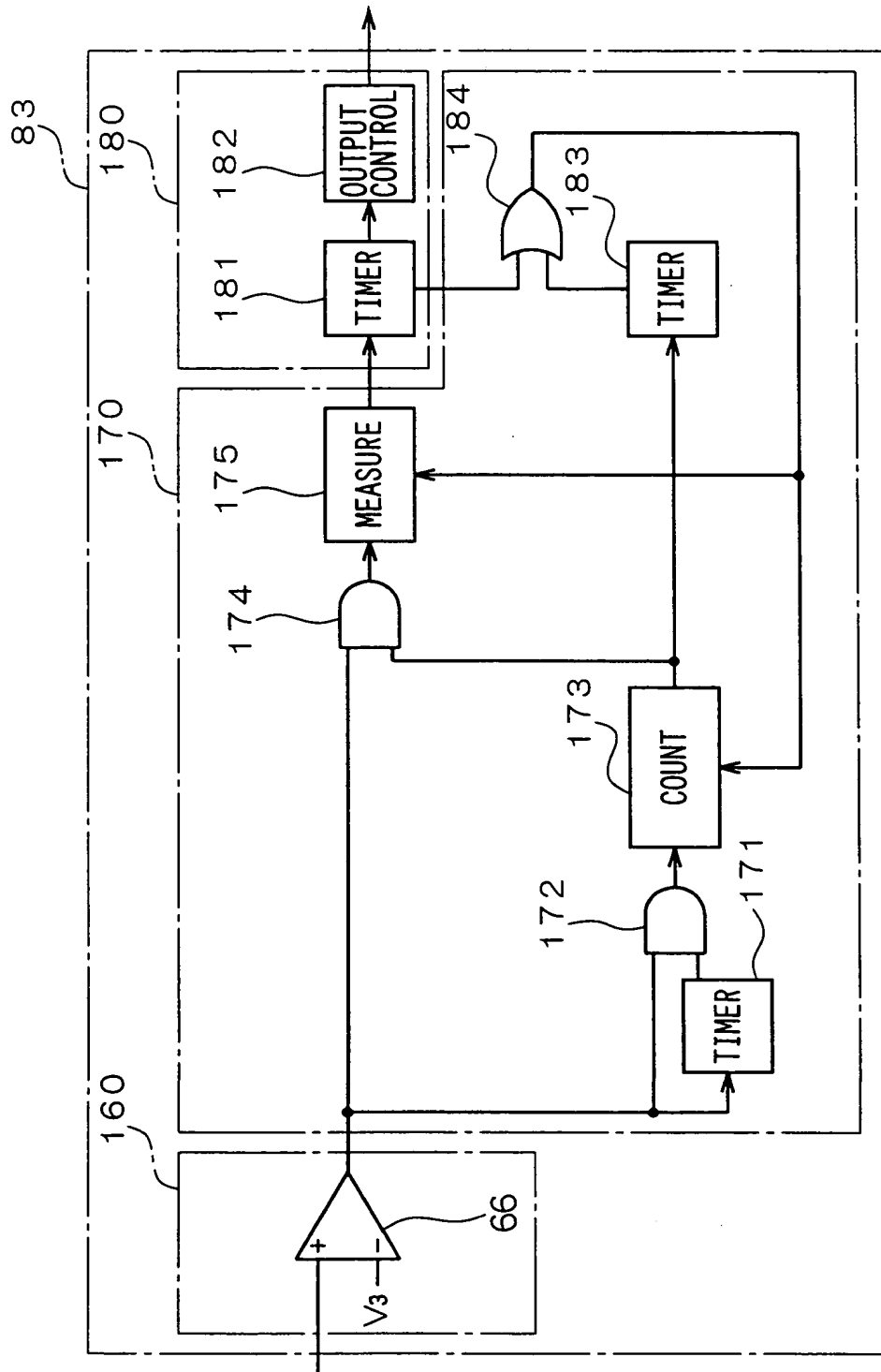


FIG. 15

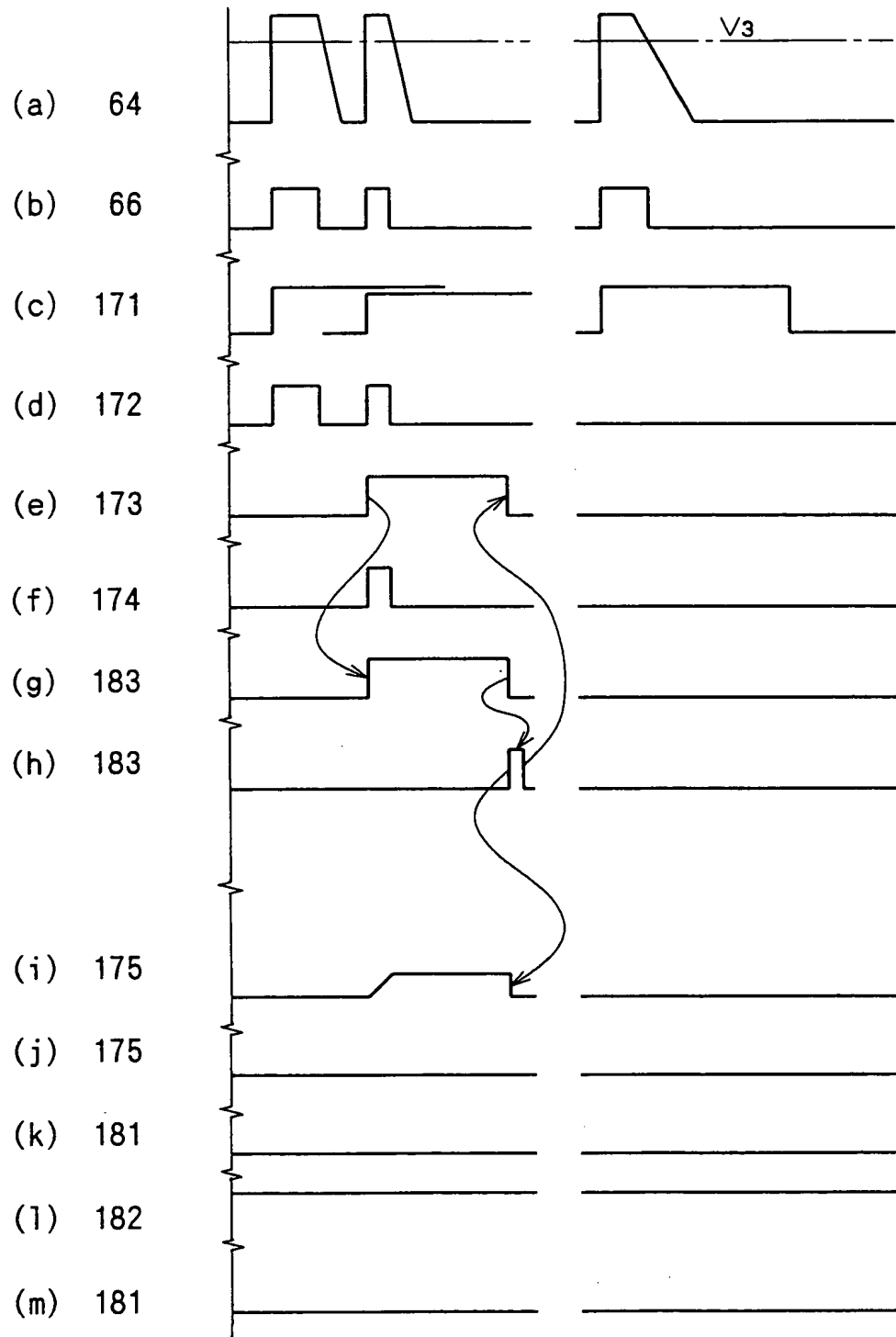


FIG. 16

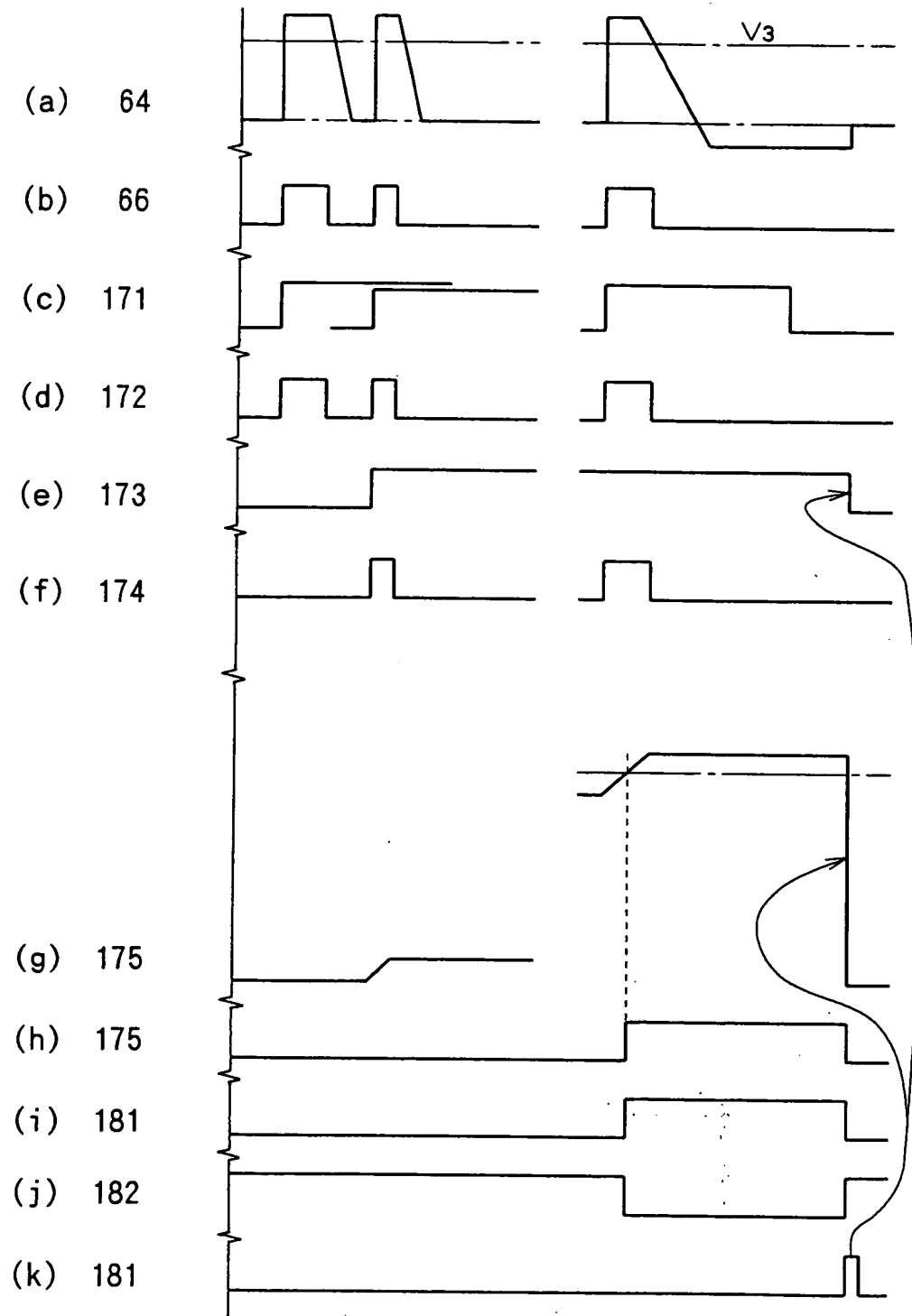


FIG. 17

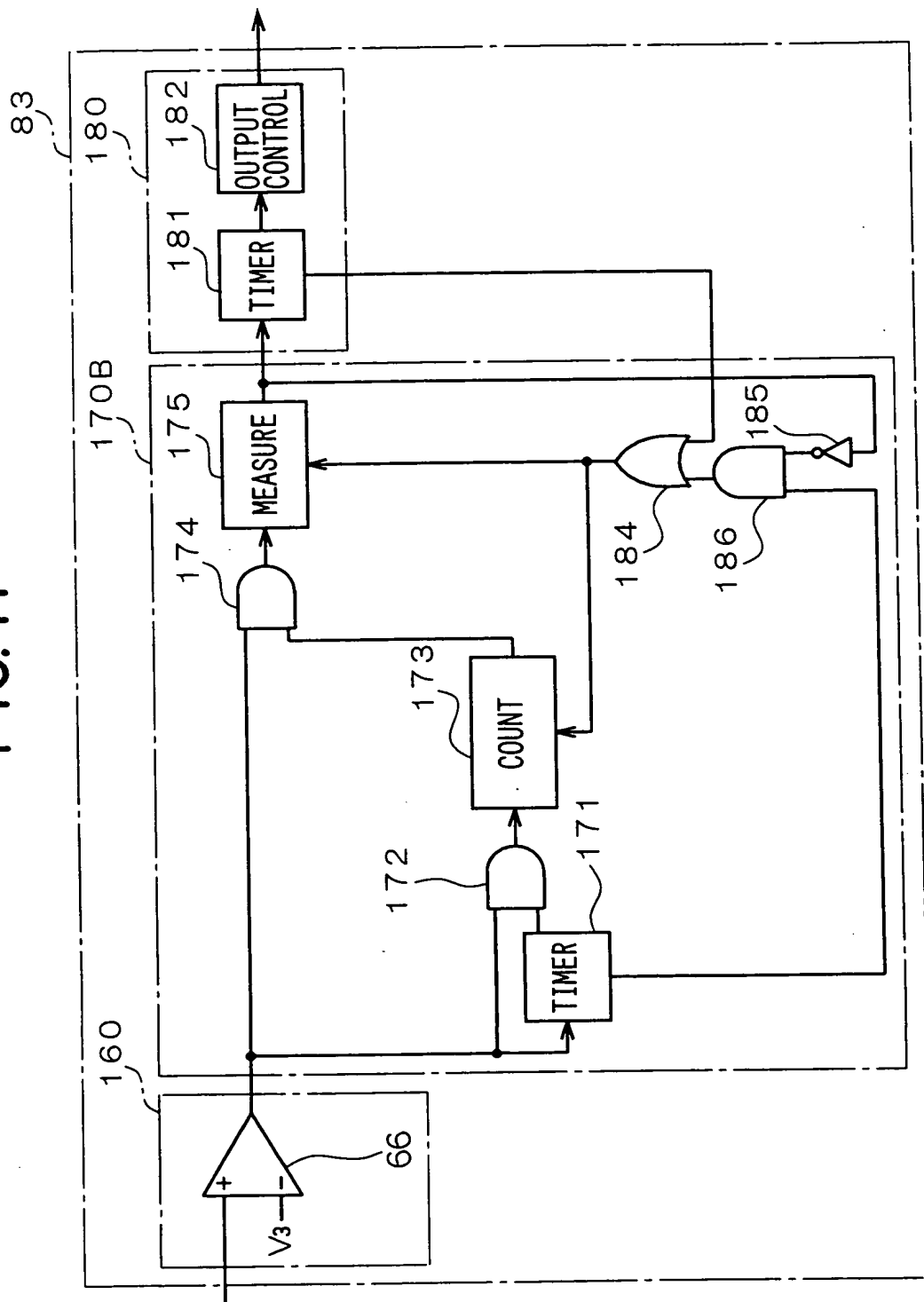


FIG. 18

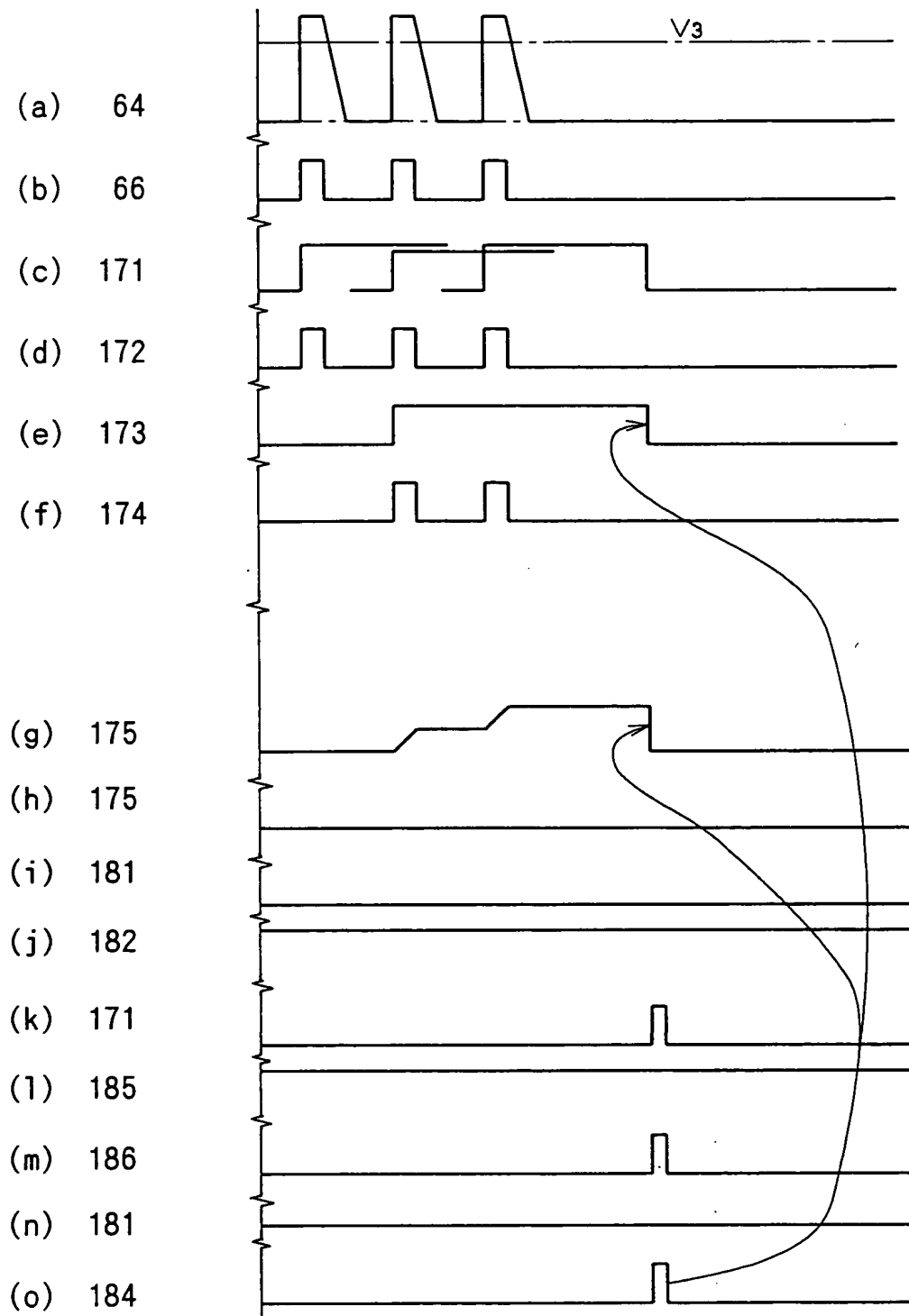


FIG. 19

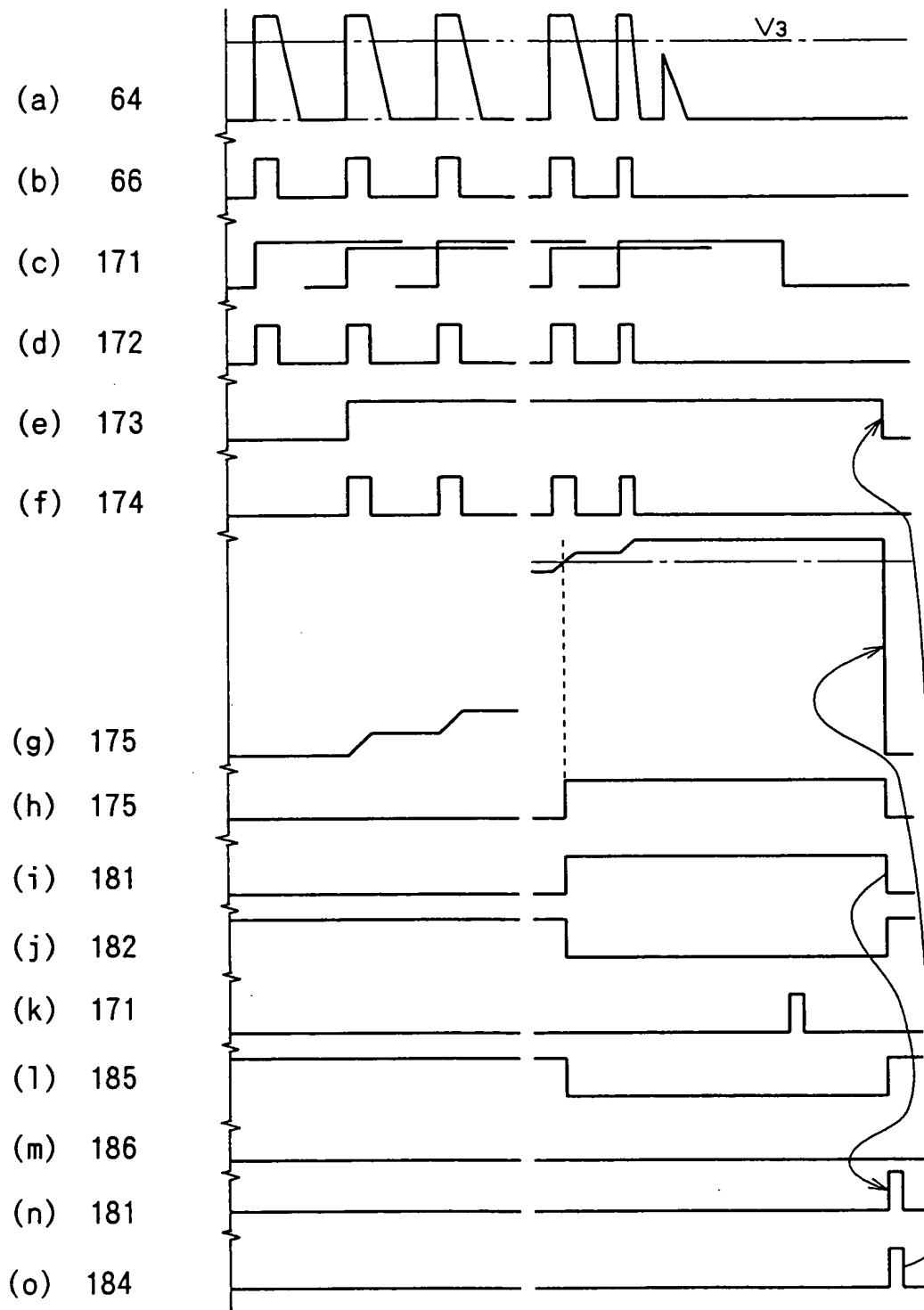


FIG. 20

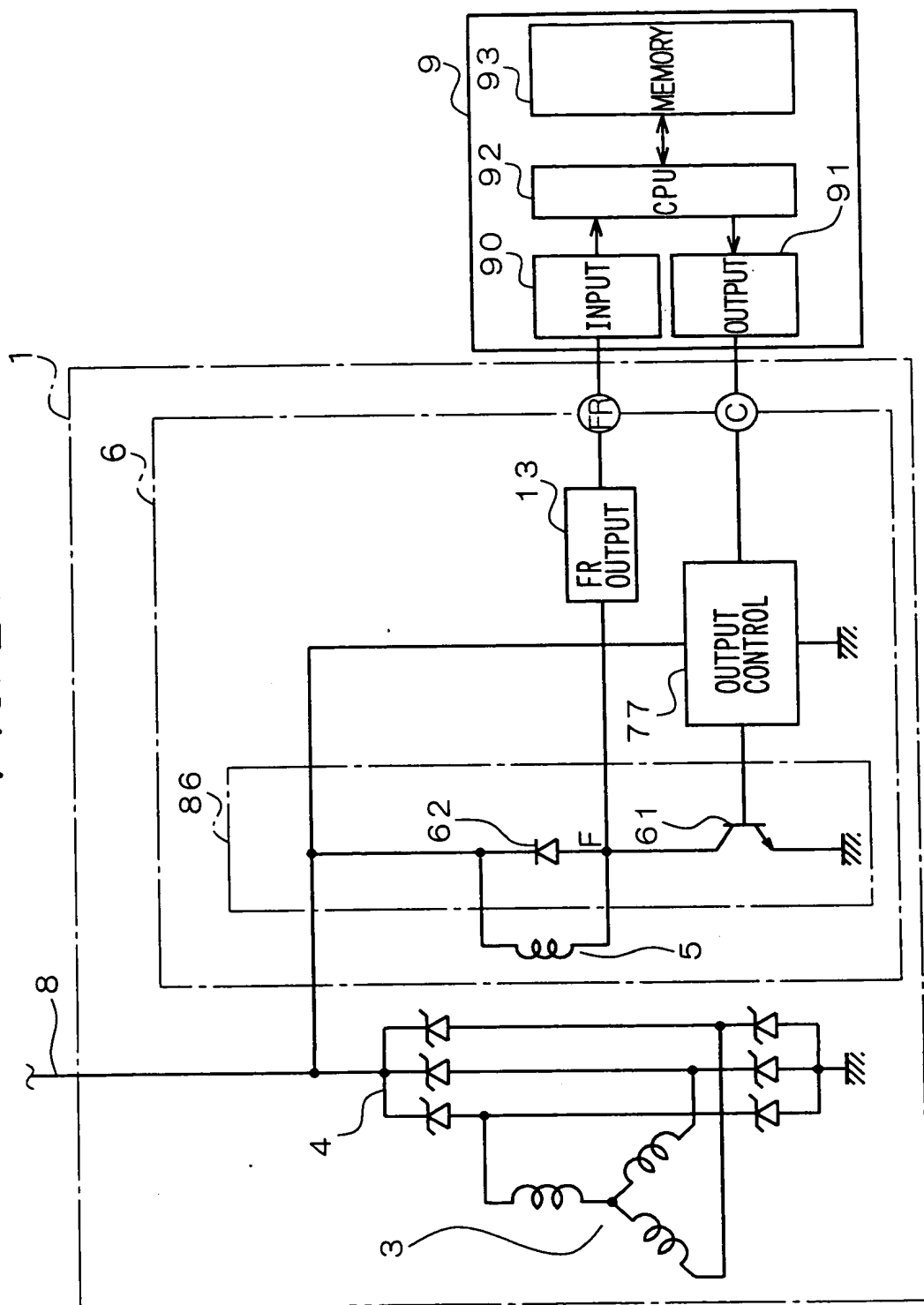


FIG. 21

